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ABSTRACT

Recent theoretical advances in text analysis and reading comprehension research are discussed and some implications for the related domain of textual interaction in composition in English as a second language (ESL) are suggested. The reading comprehension research reviewed is research from the perspective of written text as communicative interaction, especially the empirical findings that appear to have direct implication for ESL composition instruction. The implications include the suggestion that teaching ESL writers about the top-level rhetorical organization of expository text, teaching them how to choose an appropriate plan to accomplish specific communication goals, and teaching them how to signal a text's organization through appropriate linguistic devices should all function to make ESL writing more effective. (Author/MSE)

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TEXT AS INTERACTION:

SOME IMPLICATIONS OF TEXT ANALYSIS AND READING RESEARCH FOR ESL COMPOSITION

by

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TEXT AS INTERACTION: SOME IMPLICATIONS OF TEXT ANALYSIS AND READING RESEARCH FOR ESL COMPOSITION

Patricia L. Carrell

Abstract

This paper discusses some recent theoretical advances in text analysis and reading comprehension research---research from the perspective of written text as communicative interaction---and suggests some implications of these research findings for a related domain of textual interaction, namely ESL composition. Specifically, the paper reviews Meyer's (1975, 1977, 1982, Meyer, Brandt, and Bluth 1980, Meyer and Rice 1982, Meyer and Freedle 1984) empirical findings of reading research which appear to have direct implications for ESL composition and instruction in ESL composition. These implications include the suggestion that teaching ESL writers about the top-level rhetorical organization of expository text, teaching them how to choose the appropriate plan to accomplish specific communication goals, and teaching them how to signal a text's organization through appropriate linguistic devices should all function to make ESl writing more effective.

TEXT AS INTERACTION: SOME IMPLICATIONS OF TEXT ANALYSIS AND READING RESEARCH FOR ESL COMPOSITION

Patricia L. Carrell

Introduction

In keeping with the theme of this colloquium---presenting recent linguistic and psychological theories of text analysis that lend themselves to the study of writing and reading comprehension in ESL, and looking at text not only as a product but also as a process of creation and interpretation---the aim of this paper is to take some theoretical and empirical research findings from two closely related domains of applied linguistics---namely, text analysis and reading comprehension research---and to suggest implications of those research findings for ESL composition.

Text Analysis as Communicative Interaction

A number of different approaches have been taken to the analysis of texts. Many researchers have been hard at work trying to understand the fundamental properties of texts and some theoretical accounts of text have been proposed. Often these accounts have been in terms of linguistic theories of text, i.e., textual analysis techniques which parallel sentence analysis techniques. These approaches are even sometimes called text "grammars." Among others to attempt a linguistic type of analysis of connected discourse or text have been the American structuralist Charles Fries (1952), the first American transformationalist Zellig Harris (1970), and the tagmemicists Kenneth Pike (1967) and Robert Longacre (1968, 1972). More recently, the properties of texts have been examined in terms of the linguistic property of cohesion (Halliday and Hasan 1976, Hasan 1978). (For a critique of cohesion as the sole explanation of textuality, see Morgan & Sellner 1980, Beaugrande & Dressler

1981, Carrell 1982, 1983a, 1984a, Mosenthal & Tierney 1983.)

Other text analysis systems have emerged which have a psychological rather than a linguistic basis; they view texts in terms of the psychological processes involved in producing and comprehending them. For example, Kintsch's (1974) propositional system was the basic tool used in the development of Kintsch and van Dijk's (1978) concept of macrostructure and its role in a theory of discourse comprehension and production. The story grammars, especially of Stein and Glenn (1979), and Mandler and Johnson (1977), strongly predict comprehension of narrative text based on a text's adherence to the canonical ordering of story parts. Likewise, Meyer's (1975) research on the content structure of expository text has shown the importance of the top-level rhetorical organization of a text to the reader's comprehension.

One of the most promising approaches to text analysis is the one taken by Robert de Beaugrande (1980, Beaugrande & Dressler 1981), which draws heavily on a view of text as communicative interaction. Beaugrande argues that texts cannot be studied via mere extension of linguistic methodology to the domain of texts. A purely linguistic analysis of texts---a grammar for texts, with texts viewed simply as units larger than sentences, or sequences of sentences---is doomed to failure. Beaugrande argues that in order to understand texts we must study them as they function in human interaction. The central notion of Beaugrande's work is that <u>textuality</u>---what makes a text a unified, meaningful whole rather than just a string of unrelated words and sentences---lies not <u>in</u> the text <u>per se</u> as some independent artifactual object of study, but rather in the social and psychological activities human beings perform with it. Taking the position that real communicative behavior can be explained only if language is modelled as an interactive system, Beaugrande proposes a procedural approach to the study of texts in communication. A text

is viewed as the outcome of procedural operations, and as such, cannot be adequately described and explained in isolation from the procedures humans use to produce and receive it. Those interested in more on these ideas of text as communicative interaction, text as the outcome of human problem-solving procedures, are referred to the writings of Beaugrande (1980, Beaugrande & Dressler 1981) and to a forthcoming review of Beaugrande and Dressler (Carrell 1984b).

Reading Research: More on Communicative Interaction

Closely related to the research on text analysis in terms of comprehension and production processes, in fact, the other side of the same coin, is the study of reading comprehension. Recent research in reading comprehension has clearly shown the dynamic, interactive nature of reading comprehension. What a reader understands from a text is not solely a function of the linguistic or even hierarchical structure of the text. Reading comprehension is not solely an analysis problem, a bottom-up process of constructing meaning from the linguistic cues in the text. Rather, reading comprehension is an interactive process between the content and formal, hierarchical structure of the text and the reader's prior knowledge structures, or schemata for content and form. Reading comprehension is simultaneously both a top-down and bottom-up process. It is bottom-up in the sense that readers must take in the linguistic cues of the text and integrate them into their ongoing hypotheses about the content and form of the text; it is top-down in the sense that readers must be formulating hypotheses, expectations, anticipations, based on their background knowledge of content and form (Rumelhart 1977, 1980).

Thus, the recent research on text analysis and on reading comprehension has shown the important role played by the mental representation of a text formed in the mind of the reader (Meyer 1982). This representation is not

identical to the text itself, but is rather the product of the interactive process between the text and the reader (Rumelhart 1980). A better understanding of what the mental representation of a text is and how it is formed in long-term memory has implications for text production, or composition, as well. For example, these recent insights into text comprehension should help us understand the composition process better and, thence, as Bonnie Meyer suggests, "should help writers plan texts which will enable their readers to create representations which better match the writer's purpose in communication." (1982:37)

Based on the foregoing theoretical preamble, I should now like to discuss some specific empirical research results on the relationship of text structure and reading comprehension and suggest some implications of those findings for ESL composition, or ESL text production. I shall be drawing these findings most particularly from the research of Bonnie Meyer and her colleagues and students (Meyer 1975, 1977, Meyer, Brandt & Bluth 1982, Meyer & Rice 1982, Meyer & Freedle 1984).

However, before discussing Meyer's research findings and their implications for ESL composition, I would like to briefly mention a related reference in which the application of schema theory to ESL composition is proposed. I will not be discussing this paper, but because it falls into the same general area of applying schema-theoretical notions of text processing to ESL composition, I would like to mention it. This is a recent paper by Alptekin and Alptekin (1983) on the role of <u>content</u> schemata in ESL composition. I will not be discussing this paper because my focus today is not content schemata, but rather formal rhetorical schemata. (See Carrell 1983b for discussion of content versus formal schemata.)

Empirical Reading Research and Implications for ESL Composition

In her research on the interaction of the rhetorical structure of a text and reading comprehension, Meyer (1975, 1982) has gathered empirical evidence that five different types of expository text structures affect reading comprehension. These five basic types are called: causation, comparison, problem/solution, description, and time-order. She does not claim that these five types are either exhaustive or definitive, but rather that they represent significantly distinctive types. Briefly, the causation structure develops a topic as a cause-effect relationship. The comparison structure develops a topic in terms of opposing or contrasting viewpoints. The problem/solution structure develops a topic as a problem and a solution, a remark and a reply, or a question and an answer. The description structure develops a topic by presenting a collection of descriptions, e.g., of its component parts or its attributes. Finally, the time-order structure develops a topic in terms of events or ideas in chronological order. Using these five types of text structure, Meyer and her colleagues have studied the effects of rhetorical organization on native English speakers' reading comprehension.

In one study, ninth graders each read two texts: one written with the comparison structure, the other with the problem/solution structure. In analyzing the recall protocols these students wrote immediately after reading and again a week later, Meyer found that if the students organized their recalls according to the text's structure, they remembered far more content, retaining not only the main ideas especially well, even a week after reading, but also recovering more details. These students also did better on a true/false test on the content of the passage, and they were also the students who had demonstrated good reading comprehension skills on standardized tests. Conversely, those who did not use the text's structure to organize their recalls tended to make disorganized lists of ideas, so that they neither

recovered the main ideas nor the details very well. These also were the students who scored poorly on the standardized reading tests. Meyer has conducted similar studies with older readers, including university undergraduates, with the same results.

In a recent ESL study (Carrell 1984c), results similar to Meyer's were obtained. Using expository texts which conveyed the same content, but which structured that content with either a comparison, problem/solution, causation, or description top-level rhetorical organization, it was found that if the ESL readers organized their recalls according to the structure of the text version they read, they recalled significantly more ideas from the original text than if they did not use the structure of the original text to organize their recalls.

Meyer and one of her graduate students (Bartlett 1978) went on to show that the relationship between use of the text's structure in organizing one's recall of the text is not only highly correlated with the amount of information recalled, but causative. Bartlett spent a week teaching a group of ninth-graders to identify and use four of the five types of top-level text structures (all but the time-order type). This group read and was tested for recall of texts on three occasions: before training, a day after training, and three weeks after instruction. A control group did the same tasks but received no instruction about the text types. The trained group remembered nearly twice as much content from the texts after their instruction (both one day after and three weeks after) than they could before. And on the tests after instruction, the trained group did twice as well as the control group. Moreover, the classroom teacher in the experimental group wrote a follow-up letter some time after the experiment attesting to the lasting effects of the instruction on the reading comprehension and recall behavior of his students.

There are two types of implications of these results. First are the implications for reading instruction, namely that ESL reading instruction might profitably be geared to the identification of text structure so that readers can effectively learn and remember the materials they study. Carrell (1984d) reviews a number of studies which have shown that teaching various aspects of text structure can facilitate reading comprehension for native English readers. That paper also describes a training study currently in progress designed to address the same question for ESL readers---namely, can we facilitate ESL reading comprehension by teaching text structure? Therefore, no more about Meyer's implications for ESL reading instruction will be said here.

Second, however, are the parallel implications for ESL composition, namely a need in ESL writing instruction for writers to be taught the various types of structures so that they learn how to structure the texts they produce to offer readers this support. Meyer's studies all suggest that composition teachers who assign papers that describe, compare, raise problems and suggest solutions, and so forth, are on the right track. However, they also suggest that students may need to be explicitly and effectively taught about such rhetorical text structures. Teaching the identification of text structure apart from content, as well as providing practice in using different text structures on a variety of topics, should provide benefits to ESL writers. However, the appropriate pedagogical research on this topic has yet to be conducted.

Beyond the general importance to writers and readers alike of recognizing and utilizing textual structure, Meyer has also found that different text structures may be more or less effective for different communication goals. For example, Meyer (Meyer, Brandt, and Bluth 1980) found that when the same content was processed in one of the four different text structures, the descriptive type of organization was the least effective in facilitating recall when people read a text for the purpose of remembering it. Readers of the

comparison and causation versions, for example, did better on recall (immediately and a week later) and on answering questions. Again, similar results were obtained for both ninth-graders and adult native English speaking readers.

In the ESL study previously mentioned (Carrell 1984c), a pattern similar to Meyer's was found. Expository texts conveying the same basic content but organized with a comparison, problem/solution, or causation top-level structure were better recalled by ESL readers than texts with a description type of organization. ESL readers who read versions of the text with one of the first three types of top-level organization recalled significantly more ideas than did ESL readers who read the version with the description type of organization. This was true of both their immediate recalls, and of delayed recalls written 48 hours later.

In yet another study, using a text which contained both comparison and time-order information, but in two versions, one emphasizing the comparison structure, and the other emphasizing the time-order structure, Meyer (1982) found that although the total amount of information recalled did not differ when readers used one or the other of these text's structures to organize their recall, there was a big difference in the kinds of information remembered. If readers identified and used the comparison structure, they tended to remember causal and comparative relationships and related the content in this manner, but recalled few specific facts, e.g., names and historical events. By contrast, readers who recognized and used the time-order structure in their recalls tended to remember the specific facts very well, but recalled less of the information which was closely related to the comparative, causal logic in the text. Thus, Meyer's research shows that different textual structures will yield different effects on readers; a writer may achieve different goals with

readers by using different structures. This evidence suggests that giving writers explicit instruction in how to structure texts differentially according to the goals of a particular communication ought to lead to more effective written communication, i.e., writers ought to be able to achieve their goals.

Other aspects of Meyer's research findings on reading which have implications for composition are the effects of (1) the hierarchical structure of a text, and (2) the linguistic signals used to communicate that hierarchy. First, related to the hierarchical structure of a text, Meyer's research (1975) (and also that of Kintsch & van Dijk 1978, and Mandler & Johnson 1977) has shown that the hierarchical content structure of a text plays an important role in reading comprehension and reading recall. Research with various text materials, readers, and tasks has generally indicated that content at the top of the hierarchy---the superordinate information in the text---is better recalled and retained over time than content at lower levels. One explanation of this may be that readers make heavier use of the top-level superordinate content, calling it to mind frequently during reading as they try to tie in the larger amounts of subordinate details coming from the text. Thus, this top-level content gets rehearsed more frequently and is the general frame within which the reader is able to make sense of the entire text.

Recognizing that there is a hierarchy in the content of most texts is obviously what leads many composition teachers to emphasize the use of outlines. An outline can function to keep the writer returning periodically to the high levels of the content hierarchy. Sheetz-Brunetti and Johnson (1983) have proposed the use of simple diagrams (visual outlines, pyramids of boxes with connecting lines) to teach ESL composition skills for one type of English expository prose, the description type. However, directions for outlining are often vague about how various entries lower in the hierarchy are (or should be) related to the top-level. Meyer's (1982) reading research has shown that

readers often cannot tell whether events are related causally or temporally; and they often cannot tell the difference between the causes and the effects. So, writers, especially ESL writers may need particular help with effective outlining.

Which brings us to the second point previously mentioned---signalling. Meyer's research has found that when writers use express signalling devices to label these hierarchical relationships, there is a facilitating effect on reading comprehension. Signalling---with words like "thus," "therefore," "consequently," "nevertheless," "evidence," "further details," "summary," "conclusion"---may aid the reader to detect and use the hierarchical structure. What is particularly interesting about Meyer's empirical findings in this area (Meyer, Brandt & Bluth 1980) is that the presence or absence of such signalling devices has apparently little or no effect on the reading recall of ninth-grade readers at either end of the proficiency scale---those who are either very good readers or very poor readers. Apparently, very good readers can detect the hierarchical structure and utilize it in recall whether or not overt signalling devices are present. Poor readers, on the other hand, cannot make use of signals, whether they are present or not. However, the presence or absence of signalling expressions makes a difference for middle ability, average readers. Reading recall for these readers is facilitated when signalling expressions are present in the text. Meyer found a similar effect for readers at the junior college level.

What this research suggests for ESL composition is that if the writer uses one distinct text structure and is aiming for an audience of skilled, well-informed readers, signalling may be dispensed with. Such readers will have no difficulty identifying the proper text structure and using it to organize their comprehension and recall. However, to reach larger audiences of average

readers, and in particular audiences of other ESL readers, an ESL writer probably ought to learn to include appropriate use of signalling expressions to aid readers in organizing their comprehension of the text.

Conclusion

In this paper I have described some recent theoretical advances in text analysis from the perspective of text as communicative interaction, and I have taken some empirical research findings from one domain of textual interaction ---that is, reading research and the effects of a text's rhetorical structure on reading comprehension---and have suggested some implications of these research findings for a related domain of textual interaction, namely ESL composition. I have briefly reviewed some of the empirical findings of reading research, specifically those of Bonnie Meyer and her colleagues and students, which appear to have direct implications for ESL composition and instruction in ESL composition. I've suggested that teaching ESL writers about the top-level rhetorical, organizational structures of expository text, teaching them how to choose the appropriate plan to accomplish specific communication goals, and teaching them how to signal a text's organization through appropriate linguistic devices should all function to make their writing more effective.

In suggesting these implications for ESL composition from reading comprehension research, perhaps I have merely stated the obvious. After all, these implications are consonant with related research being conducted directly on the composing process as problem-solving behavior and cognitive planning (Flower & Hayes 1981, Beaugrande 1982a, 1982b). For those of us who view reading and writing as complementary processes in textual communication, this is to be expected. However, reading and writing research have often gone in separate directions, and it is only recently that attempts are being made to reunite the two domains within the general framework of cognitive science and

from the perspective of text as communicative interaction. Within the general framework of cognitive science and from the perspective of text as textual communication, findings from the independent investigation of reading and writing---that is, text comprehension and text production---should not only complement and support each other, but, hopefully, should lead to even more powerful theories of text and textual communication. Within the specific framework of ESL research and pedagogy, findings from ESL reading comprehension research and ESL composition research should also complement and support each other, leading to more powerful theories of ESL reading and writing, and thence to more effective ESL pedagogy.

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